

[illegible]

RPC
1-C

[illegible]

```

LL          IIIIII          SSSSSSSS
LL          IIIIII          SSSSSSSS
LL          II             SS
LL          II             SS
LL          II             SS
LL          II             SS
LL          II             SSSSSS
LL          II             SSSSSS
LL          II             SS
LL          II             SS
LL          II             SS
LL          II             SS
LLLLLLLLLLLL IIIIII          SSSSSSSS
LLLLLLLLLLLL IIIIII          SSSSSSSS

```


G 2
16-Sep-1984 02:17:05
14-Sep-1984 13:04:23VAX-11 Bliss-32 V4.0-742
[RPGRTL.SRC]RPGOPEN.B32;1

```
1 0001 0 MODULE RPG$OPEN( %TITLE 'Locate key of reference'
2 0002 0 IDENT = '1-001' ! file:RPGOPEN.B32 EDIT:DJB1001
3 0003 0 ) =
4 0004 1 BEGIN
5 0005 1
6 0006 1 *****
7 0007 1 *
8 0008 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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25 0025 1 *
26 0026 1 *
27 0027 1 *****
28 0028 1
29 0029 1 ++
30 0030 1 FACILITY: RPGII SUPPORT
31 0031 1
32 0032 1 ABSTRACT:
33 0033 1
34 0034 1 This module contains 1 procedure to locate the appropriate key of
35 0035 1 reference in an existing indexed file.
36 0036 1
37 0037 1 ENVIRONMENT: Vax-11 User Mode
38 0038 1
39 0039 1 AUTHOR: D J Braffitt, CREATION DATE: 18-Mar-1983
40 0040 1
41 0041 1 MODIFIED BY:
42 0042 1
43 0043 1 1-001 Original.
44 0044 1 --
45 0045 1
46 0046 1 !<BLF/PAGE>
```

DJB 18-Mar-1983

RPG\$OPEN
1-001

Locate key of reference
Declarations

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16-Sep-1984 02:17:05
14-Sep-1984 13:04:23

VAX-11 Bliss-32 V4.0-742
[PPGRTL.SRC]RPGOPEN.B32;1

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```

: 48 0047 1 %SBTTL 'Declarations'
: 49 0048 1 | +
: 50 0049 1 | PROLOGUE FILE:
: 51 0050 1 | -
: 52 0051 1 |
: 53 0052 1 REQUIRE 'RTLIN:RPGPROLOG';
: 54 0117 1
: 55 0118 1
: 56 0119 1 | +
: 57 0120 1 | LINKAGES
: 58 0121 1 | NONE
: 59 0122 1 | -
: 60 0123 1 |
: 61 0124 1 | +
: 62 0125 1 | TABLE OF CONTENTS:
: 63 0126 1 | -
: 64 0127 1 |
: 65 0128 1 FORWARD ROUTINE
: 66 0129 1 RPG$OPEN_INDEXED;
: 67 0130 1
: 68 0131 1 | +
: 69 0132 1 | INCLUDE FILES
: 70 0133 1 | NONE
: 71 0134 1 | -
: 72 0135 1 |
: 73 0136 1 | +
: 74 0137 1 | MACROS
: 75 0138 1 | NONE
: 76 0139 1 | -
: 77 0140 1 |
: 78 0141 1 | +
: 79 0142 1 | EXTERNAL REFERENCES
: 80 0143 1 | -
: 81 0144 1 |
: 82 0145 1 EXTERNAL ROUTINE
: 83 0146 1 RPG$IOEXCEPTION;
: 84 0147 1
: 85 0148 1 EXTERNAL LITERAL
: 86 0149 1 RPG$_ORGNOTIND;

```

! Switches, PSECTs, macros,
! linkages and LIBRARYs


```

88 0150 1 %SBTTL 'RPG$OPEN_INDEXED - Locate key of reference'
89 0151 1 GLOBAL ROUTINE RPG$OPEN_INDEXED (
90 0152 1 FAB: REF BLOCK[,BYTE] ! Address of FAB
91 0153 1 )=
92 0154 1
93 0155 1 ++
94 0156 1
95 0157 1 FUNCTIONAL DESCRIPTION:
96 0158 1
97 0159 1 This routine is passed the FAB for an indexed file and opens the file
98 0160 1 based on the appropriate key of reference. The XAB SIZ0, POS0, DTP and NSG
99 0161 1 fields describe the desired key of reference. The goal of this module is to
100 0162 1 get the appropriate key of reference value into the XAB and RAB. Any
101 0163 1 RMS error should be returned as the value of this routine so that
102 0164 1 the generated code will call RPG$IOEXCEPTION. In the case that the file
103 0165 1 organization is not indexed (RMS does not check this, but this module does),
104 0166 1 then RPG$IOEXCEPTION is called directly from this module.
105 0167 1
106 0168 1 The plan of attack is to OPEN or CREATE the file, and if the file exists,
107 0169 1 make sure that it is indexed and then cycle through
108 0170 1 the various key of reference values using $DISPLAY until the
109 0171 1 XAB is set up correctly. Then the RAB key of reference is set
110 0172 1 to the key of reference that has been discovered. The XAB and RAB
111 0173 1 are set initially to the primary key, so if this key matches the
112 0174 1 RPGII programmer's desired key, we are done. The info on the RPGII
113 0175 1 programmer's desired key should be saved before the OPEN for later
114 0176 1 comparison.
115 0177 1
116 0178 1 CALLING SEQUENCE:
117 0179 1
118 0180 1 CALL RPG$OPEN_INDEXED (fab.rr.r)
119 0181 1
120 0182 1 FORMAL PARAMETERS:
121 0183 1
122 0184 1 fab - Address of FAB
123 0185 1
124 0186 1 IMPLICIT INPUTS:
125 0187 1
126 0188 1 NONE
127 0189 1
128 0190 1 IMPLICIT OUTPUTS:
129 0191 1
130 0192 1 NONE
131 0193 1
132 0194 1 ROUTINE VALUE:
133 0195 1
134 0196 1 RMS status value
135 0197 1
136 0198 1 SIDE EFFECTS:
137 0199 1
138 0200 1
139 0201 1 The file pointed to by the fab is opened or created as appropriate.
140 0202 1
141 0203 1 --
```



```
143 0204 2 BEGIN
144 0205 2
145 0206 2 MAP
146 0207 2 FAB : REF BLOCK[, BYTE];
147 0208 2
148 0209 2 LOCAL
149 0210 2 RAB : REF BLOCK[, BYTE];
150 0211 2 XAB : REF BLOCK[, BYTE];
151 0212 2 SAVE_KEY_POS0 : WORD;
152 0213 2 SAVE_KEY_SIZ0 : BYTE;
153 0214 2 SAVE_KEY_DTP : BYTE;
154 0215 2 RMS_STATUS;
155 0216 2
156 0217 2 RAB = .FAB - RAB$C_BLN;
157 0218 2 XAB = .FAB + FAB$C_BLN + NAM$C_BLN;
158 0219 2 SAVE_KEY_POS0 = .XAB[XAB$W_POS0];
159 0220 2 SAVE_KEY_SIZ0 = .XAB[XAB$B_SIZ0];
160 0221 2 SAVE_KEY_DTP = .XAB[XAB$B_DTP];
161 0222 2
162 0223 2 !+
163 0224 2 If the CIF (Create IF) bit is set, call $CREATE which will create the
164 0225 2 file if the open fails. The XAB checking should only be done if the
165 0226 2 RMS status is other than RMS$ CREATED.
166 0227 2 If the CIF bit is not set, call $OPEN and then perform XAB checking
167 0228 2 only on success return.
168 0229 2 -
169 0230 2 IF .FAB[FAB$V_CIF]
170 0231 2 THEN
171 0232 2 RMS_STATUS = $CREATE(FAB=.FAB)
172 0233 2 ELSE
173 0234 2 RMS_STATUS = $OPEN(FAB=.FAB);
174 0235 2
175 0236 2 IF .RMS_STATUS AND (.RMS_STATUS NEQ RMS$_CREATED)
176 0237 2 THEN
177 0238 2 BEGIN
178 0239 2 !+
179 0240 2 If we get here, the file already exists and has been successfully
180 0241 2 opened. Check that the file organization is indexed.
181 0242 2 !-
182 0243 2 IF .FAB[FAB$B_ORG] NEQ FAB$C_IDX
183 0244 2 THEN
184 0245 2 BEGIN
185 0246 2 RAB[RPG$L_CTX_ERROR] = RPG$_ORGNOTIND;
186 0247 2 RPG$IOEXCEPTION(3, .RAB); ! The 3 indicates error is in
187 0248 2 ! the file context area
188 0249 2 RETURN RPG$_ORGNOTIND;
189 0250 2 END;
190 0251 2
191 0252 2 !+
192 0253 2 If the XAB POS0, SIZ0 and DTP fields just filled in by the $OPEN match the
193 0254 2 requested POS0, SIZ0 and DTP fields and the NSG field is 1
194 0255 2 then the current key is to be
195 0256 2 the key of reference and we are done except for setting the RAB KRF
196 0257 2 byte to be the anem as the XAB REF byte; otherwise, we must change the
197 0258 2 key of reference in the XAB and then try a $DISPLAY on the next key
198 0259 2 if there is one.
199 0260 2 !-
```

RPG\$OPEN
1-001

Locate key of reference
RPG\$OPEN_INDEXED - Locate key of reference

K 2
16-Sep-1984 02:17:05
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[RPGRTL.SRC]RPGOPEN.B32;1

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```
200 0261 5      WHILE NOT ((.SAVE_KEY_POS0 EQL .XAB[XAB$W_POS0])
201 0262 5      AND (.SAVE_KEY_SIZE EQL .XAB[XAB$B_SIZE])
202 0263 5      AND (.SAVE_KEY_DTP EQL .XAB[XAB$B_DTP])
203 0264 3      AND (.XAB[XAB$B_NSG] EQL 1)) DO
204 0265 4      BEGIN
205 0266 4      XAB[XAB$B_REF] = .XAB[XAB$B_REF] + 1;
206 0267 4      +
207 0268 4      Invalid key of reference terminates things.
208 0269 4
209 0270 4      Maybe in the future, some more refined messaged could be given
210 0271 4      such as invalid key. In the case of a file that turns out to
211 0272 4      have just one key, a message pointing to the specific attribute
212 0273 4      of that key that is in error from the F spec (position, size, data
213 0274 4      type or number of segments) could be given to the user. For
214 0275 4      now, invalid key of reference is returned if no key matching
215 0276 4      the requested key is found. This is compatible with PDP-11 RPGII.
216 0277 4      -
217 0278 4      RMS_STATUS = $DISPLAY(FAB=.FAB);
218 0279 4      IF NOT .RMS_STATUS
219 0280 4      THEN
220 0281 4      EXITLOOP
221 0282 4      END;
222 0283 3      +
223 0284 3      The RAB key of reference must be set in the case the RMS_STATUS
224 0285 3      is successful.
225 0286 3      -
226 0287 3      IF .RMS_STATUS
227 0288 3      THEN
228 0289 3      RAB[RAB$B_KRF] = .XAB[XAB$B_REF]
229 0290 3      END;
230 0291 2      RETURN .RMS_STATUS
231 0292 2
232 0293 2
233 0294 1      END;
```

```
03FC 00000
59 00000000G 8F D0 000C2
54 04 AC D0 00009
53 BC A4 9E 0000D
52 00B0 C4 9E 00011
58 1E A2 B0 00016
57 2E A2 90 0001A
56 13 A2 90 0001E
OB 07 A4 01 E1 00022
00000000G 00 54 DD 00027
01 FB 00029
```

.TITLE RPG\$OPEN Locate key of reference
.IDENT \1-001\

.EXTRN RPG\$IOEXCEPTION
.EXTRN RPG\$ ORGNOTIND, SYS\$CREATE
.EXTRN SYS\$OPEN, SYS\$DISPLAY

.PSECT _RPG\$CODE,NOWRT, SHR, PIC,2

```
.ENTRY RPG$OPEN_INDEXED, Save R2,R3,R4,R5,R6,R7,- : 0151
R8,R9
MOVL #RPG$ ORGNOTIND, R9
MOVL FAB, R4 : 0217
MOVAB -68(R4), RAB
MOVAB 176(R4), XAB : 0218
MOVW 30(XAB), SAVE_KEY_POS0 : 0219
MOVB 46(XAB), SAVE_KEY_SIZE : 0220
MOVB 19(XAB), SAVE_KEY_DTP : 0221
BBC #1, 7(R4), 1$ : 0230
PUSHL R4 : 0232
CALLS #1, SYS$CREATE
```


RPG\$OPEN
1-001

Locate key of reference
RPG\$OPEN_INDEXED - Locate key of reference

L 2
16-Sep-1984 02:17:05
14-Sep-1984 13:04:23

VAX-11 Bliss-32 V4.0-742
[RPGRTL.SRC]RPGOPEN.B32;1

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00000000G	00		09	11	00030	BRB	2\$		
	55		54	DD	00032	PUSHL	R4		0234
	54		01	FB	00034	CALLS	#1, SYSS\$OPEN		
00010619	8F		50	DO	0003B	MOVL	R0, RMS_STATUS		0236
			55	E9	0003E	BLBC	RMS_STATUS, 6\$		
			55	D1	00041	CMPL	RMS_STATUS, #67097		
	20	1D	4B	13	00048	BEQL	6\$		0243
			A4	91	0004A	CMPB	29(R4), #32		
F8	A3		13	13	0004E	BEQL	3\$		0246
			59	DO	00050	MOVL	R9, -8(RAB)		0247
			53	DD	00054	PUSHL	RAB		
00000000G	00		03	DD	00056	PUSHL	#3		
	50		02	FB	00058	CALLS	#2, RPG\$IOEXCEPTION		0249
			59	DO	0005F	MOVL	R9, R0		
	1E	A2		04	00062	RET			0261
			58	B1	00063	CMPW	SAVE_KEY_POS0, 30(XAB)		
2E	A2		12	12	00067	BNEQ	4\$		0262
			57	91	00069	CMPB	SAVE_KEY_SIZE, 46(XAB)		
13	A2		0C	12	0006D	BNEQ	4\$		0263
			56	91	0006F	CMPB	SAVE_KEY_DTP, 19(XAB)		
	01	14	06	12	00073	BNEQ	4\$		0264
			A2	91	00075	CMPB	20(XAB), #1		
		17	12	13	00079	BEQL	5\$		0266
			A2	96	0007B	INCB	23(XAB)		0278
00000000G	00		54	DD	0007E	PUSHL	R4		
	55		01	FB	00080	CALLS	#1, SYSS\$DISPLAY		
	D6		50	DO	00087	MOVL	R0, RMS_STATUS		0279
	05		55	E8	0008A	BLBS	RMS_STATUS, 3\$		0287
35	A3	17	55	E9	0008D	BLBC	RMS_STATUS, 6\$		0289
	50		A2	90	00090	MOVB	23(XAB), 53(RAB)		0292
			55	DO	00095	MOVL	RMS_STATUS, R0		0294
			04	00098	RET				

; Routine Size: 153 bytes, Routine Base: _RPG\$CODE + 0000

: 234 0295 1
: 235 0296 0 END ELUDOM

PSECT SUMMARY

Name	Bytes	Attributes
_RPG\$CODE	153	NOVEC, NOWRT, RD, EXE, SHR, LCL, REL, CON, PIC, ALIGN(2)

Library Statistics

File	Symbols		Pages Mapped	Processing Time
	Total	Loaded Percent		

RPG\$OPEN
1-001

Locate key of reference
RPG\$OPEN_INDEXED - Locate key of reference

M 2
16-Sep-1984 02:17:05
14-Sep-1984 13:04:23

VAX-11 Bliss-32 V4.0-742
[RPGRTL.SRC]RPGOPEN.B32;1

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```

:
: $255$DUA28:[SYSLIB]STARLET.L32;1          9776      19      0      581      00:01.0
: $255$DUA28:[RPGRTL.OBJ]RPGLIB.L32;1        54        1      1      9      00:00.1

```

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/NOTRACE/LIS=LIS\$:RPGOPEN/OBJ=OBJ\$:RPGOPEN MSRC\$:RPGOPEN/UPDATE=(ENH\$:RPGOPEN)







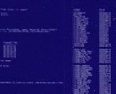















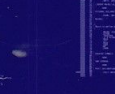











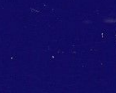



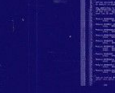
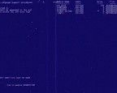










































































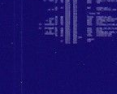




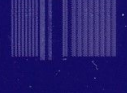






















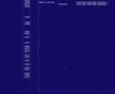
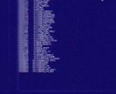



















































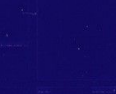
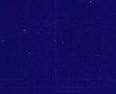















```

: Size:          153 code + 0 data bytes
: Run Time:      00:05.6
: Elapsed Time:  00:25.1
: Lines/CPU Min: 3171
: Lexemes/CPU-Min: 13746
: Memory Used:  79 pages
: Compilation Complete

```


0332 AH-BT13A-SE
VAX/VMS V4.0

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	RPGMSGTX LIS																
						DTE_DF03 MAP											
RPGMOVE3 LIS																	
			RPGSORT LIS														
	RPGOPEN LIS					RTPAD											
						CTDRIVER MAP											
																	
																	
						RTPAD MAP					RTPADMACS MAR						
RPGMSGPTR LIS																	
																	
						RPGVECTOR LIS											
	RPGPRINT LIS		RPGUPDATE LIS					RTDEF SDL		DTE_DF03 MAR	CTDRIVER LIS	